

**Encouraging Students to Show Up and Learn:
Building Awareness of Students' Attendance Using TeacherKit Student**

Peter Lane, Asia University

Abstract

This research project explores the use of an online application (TeacherKit Student) to increase students' awareness of their attendance. Because coming to class is compulsory in most Japanese universities, absenteeism can negatively affect students' grades and learning outcomes (Marburger, 2001; Marburger, 2006). Therefore, universities should be looking at ways to increase student attendance levels throughout the semester to maximize student learning and give students the best possible opportunities to succeed (Muir, 2009). The research project also examines students' opinions of the application and discusses the benefits and obstacles of using the application to enhance students' awareness of their attendance. The project is limited in its size and range; it does not seek to determine whether the application increases students' attendance or what the long-term effects of using the application may be. Instead, it is a preliminary project to determine if TeacherKit Student increases students' awareness of their attendance and what the students think of using the application in their courses. The findings suggest that the application increased students' understanding of their attendance. Furthermore, students were positive about using the application in the future and in other courses. However, technical challenges registering the application were also significant and call into question the reliability of the application to be used at scale in university settings.

Introduction

Attendance is one of the most important factors influencing students' success, grades, and learning outcomes (Credé, Roch, & Kiezczyńska, 2010). Students are told repeatedly in school and in university of the importance of attendance on their grades and on their future study or career options. In Japan, attendance is mandatory in most colleges and universities, and so attendance can greatly affect students' credits and grades. Despite this, some students receive poor grades for missing too many classes or they fail their courses outright. This is a consistent problem for universities in general (Race & Pickford, 2007; Nilson, 2010; Muir, 2009), but it is especially worrying in Japanese universities where students should be aware of the consequences of their absenteeism for their learning and for their future. This research project attempts to improve students' awareness of their attendance using a smartphone application and to explore the effect of the application on students' attitudes and behaviors. The paper opens with a discussion of the literature on the importance of attendance for study success. After describing the course and research methods, the findings are presented which suggest that the application had positive impacts on students' awareness of and attitudes to their attendance. After discussing these findings, suggestions and recommendations are offered for future research directions.

Literature Review: Does attendance matter?

Ask any teacher and they will tell you that coming to class matters. While this may seem like common sense, the research confirms this notion: attending class leads to higher grades (Kirby & Elroy, 2003; Silvestri, 2003; Moore, Jensen, Hatch, Duranczyk, Staats, & Koch, 2003). Attending class also positively affects student performance and learning outcomes (Lukkarinen, Koivukangas, & Seppälä, 2016; Bevitt, Baldwin, & Calvert, 2010). Newman, Ford, Lloyd, & Thomas (2008) investigated four undergraduate courses and found that attendance had significant effects on every course. Of course, there are other factors which may influence students grades and learning outcomes such as age, gender, motivation, personality, high school performance, study skills, curriculum design, educational environment, induction activities, and social integration (Briggs, Clark, & Hall, 2012; Trautwein & Bosse, 2017; Trotter & Roberts, 2006; Braham, 2017). While all of these factors are important, the meta-analysis conducted by Credé et al. (2010) found that attendance was

the most powerful predictor of learning outcomes, and for Jansen & Suhre (2010), attendance was not only important but crucial in determining student success.

So why do so many students miss class? Although low attendance is often linked with poor student motivation (Race, 2007) and retention issues (Bowen, Price, Lloyd, & Thomas, 2005), it is important to keep in mind that students who miss class are not automatically bad students. Whether students attend class can be strongly influenced by the quality of the lecturer or by the student's job responsibilities (Muir, 2009). For Massington and Herrington (2006), the most common reasons given by students for missing classes was being sick or being too busy with other things. In addition, university policies in different countries may shape how often or how frequently students come to class, depending on whether attendance is graded or not. For example, the average attendance rate in the US is 80%, whereas in Finland it is 40%. Clearly, attending class is viewed differently depending on where one comes from and what the consequences may be (Marburger, 2006). These national trends need to be considered when trying to improve students' attendance rates in Japan.

In summary, based on the various meta-analysis of the research (Credé et al., 2010; Louis, Bastian, McKimmie, & Lee, 2016; Mearman, Pacheco, Webber, Ivlevs, & Rahman, 2014), attending class has positive effects on students' learning outcomes and study success. In fact, for Credé et al. (2010) the "benefits of better attendance in college classes are likely to be substantial" (p. 286) and the study concludes that attendance is the most accurate predictor of academic performance, superior to that of SAT scores, GPA, study habits, or study skills.

What can be done?

We know that early and consistent class attendance strongly correlates with academic performance (Kassarnig, Bjerre-Nielsen, Mones, Lehmann, & Lassen, 2017), so teachers should be looking at ways to encourage students to regularly attend class and to intervene early before attendance becomes an issue. Reminding students when they finally show up in class that their grades are already seriously affected because of their attendance is not going to motivate students to either show up or to continue trying. Second, students need support to keep them on track. As Bowen et al. (2005) discovered, most students felt that their own poor attendance should be followed up by the university and students wanted intervention and guidance by the university when their attendance was unsatisfactory. Third, many freshman students struggle with the transition from school to university. Students' first year of

university is not only challenging but also a vital beginning to their academic success and careers (Coertjens, Brahm, Trautwein, & Lindblom-Ylänne, 2017; Kyndt, Donche, Trigwell, & Lindblom-Ylänne, 2017; Brahm, Jenert, & Wagner, 2017). Therefore, universities have to find ways to not only ease the transition from high school to university, but also enhance students' experiences during their first year (Leveson, McNeil, & Joiner, 2013). Helping students to monitor and keep track of their attendance could be one way to reduce some of the challenges students face in their first academic year, in addition to helping develop good study habits for the future. To summarize, universities need to find ways to support students regarding their attendance, especially during their first year of study.

What is the issue with attendance?

There are many different ways teachers record and monitor student attendance from using a pen and paper in class to recording absences in a computer spreadsheet to inputting students' attendance on the university Learner Management System (LMS). Having tried all of these methods, they felt too teacher centered and they did not help students understand how many classes they had missed. In other words, these methods helped the teacher to keep track of attendance but they did not help the students do so. During the semester, some students continued to ask how many classes they had missed or how many times they had been late. Other students stopped coming to class at all because they did not know how many times they had been absent. While interventions in class seemed to help some students, other students who had missed many classes never returned frequently enough to make a difference: it was already too late. From discussing the issue with colleagues, issues with attendance were a persistent problem in everyone's classes, especially for first-year students. Too many students were unaware of their own attendance and this may have had negative influences on their learning, on their attitude, and on their future decision to come to class or not. As teachers, we believe that all of our students will come to class, that they will be aware of how many classes they miss, or that they realize why it is important to attend in the first place. However, this never happens and blaming the students for the situation will not improve anything; for the responsibility for change also lies with the faculty and university. To help ameliorate the situation, various technological solutions were explored. Most of the applications available suffered from the same issue as the LMS in that they were too teacher centered. They helped the teacher keep track of attendance, but the students could not access the information themselves. The most popular application, Gradebook Pro, was not chosen as it was not free. Charging teachers and students to keep track of their attendance did not seem

fair. Eventually, the application TeacherKit Student (TKS) was chosen because the basic version of the application was free, and the teacher version of the application seemed like a popular choice online. Furthermore, TeacherKit Student allows students to download and keep track of their own attendance. In other words, it is a more student-centered approach to keeping track of attendance. Once a teacher records the attendance for the day and synchronizes the application online, all the students' attendance records are updated on their phones. They do not need to ask the teacher how many classes they have missed or how often they have been late. Instead they can just open the application and see for themselves. In addition, students who miss a class or who do not attend several classes can see their attendance from wherever they are. They no longer have the excuse of saying they do not know. The application helps teachers to keep track of student attendance while also informing students of their own daily attendance. This could potentially motivate students to come to class more often, to feel more supported by their university, and to feel more connected to their learning environment.

Research Background

The research was carried out at Asia University where attendance for freshman English is mandatory. Students are penalized for missing more than four classes, and they fail the class once they miss more than 12 classes. Students are also penalized for being late once they pass a certain threshold. Four freshman English classes, and one second-year English class participated in the study. An online survey using Google Forms was created with a mix to English questions and corresponding Japanese translations to help reduce any misunderstanding. Students were also asked to complete the survey in class so that assistance could be given if necessary. The response rate for the survey was 77%.

It is important to mention that this preliminary exploration of online attendance was limited and it sought to measure students' thoughts and attitudes regarding online attendance. The project did not seek to change university policy on attendance or seek the effects of attendance on students' grades. A more comprehensive and longer lasting investigation would be needed to address these questions and issues. This project was a test to see whether introducing online attendance application would be a feasible proposal for future research or for the benefit of the students.

Research Methods

An online Google survey was used to investigate students' awareness of their attendance before using the application and any changes to that awareness after using the application. A mix of multiple-choice questions and Likert scales were used. Given the small-scale nature of the project, the number of questions was also limited (fewer than 10). In addition, given the small sample size, the results were intended to show students general awareness of their attendance and their opinions of using the application rather than a more in-depth and quantitative analysis. Other limitations included short length of the project (one semester) and the difficulties involved accessing the attendance of students from previous years. Given these limitations, qualitative data methods were chosen for this particular preliminary project. If using the application revealed significant positive impacts on students' awareness, a larger and more consequential project could be set up for the following year to substantiate any findings and to explore the feasibility of introducing an attendance application for students on a wider scale. Research must always be practical first if it is to make difference to the practical aspects of teaching and learning (Cohen, Manion, & Morrison, 2009).

Results and Findings

This research project set out to explore two simple questions:

1. Will using an online attendance application positively impact students' awareness of their attendance?
2. What are students' initial opinions of the TeacherKit Student application?

Before starting to use the application, almost 50% of students were unaware of how many times they had been late. As for their attendance, 21.7% of students did not know how many times they had missed class. Just over half of the students knew their attendance record at the time, with 33.3% of students not knowing their attendance record, and 15% of students being unsure. Less than half of students felt that finding out their attendance was easy, with 20% disagreeing, and 36% of students being unsure. Most students said they would ask their teacher if they did not know their attendance, with 4 students claiming they would say nothing and 5 students saying they would wait until the end of the semester. However, a

significant number of students (over 30%) felt that asking the teacher about their attendance made them feel nervous occasionally or often.

To sum up, many students were unaware of how often they had been late and almost half of the students did not know their attendance record. In addition, students were dependent on the teacher to find out their attendance if they did not know it.

Results of the Research Project

After downloading and using the application on their smartphones, almost 84% of the students were aware of their attendance record. In addition, 86% of students thought it was easy to find out their attendance if they needed to. A similarly high level of respondents also felt that the TKS application helped them to know their attendance (86%).

Do you know your attendance record? (何度あなたがクラスを欠席)

93 responses

- YES
- NO
- I AM NOT SURE

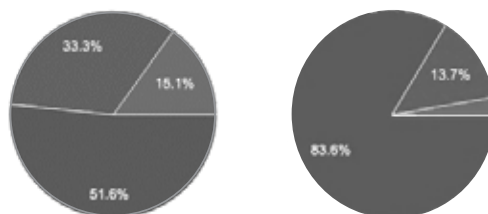


Figure 1.1: students' awareness of their attendance record before using the application (left) and after using the application (right).

Three quarters of the students surveyed wanted to use the TKS application from the beginning of next semester and almost 80% recommended other teachers to use the TKS application in their classes to help students keep track of their attendance. However, only 52% of students felt the application would help them improve their attendance in future. Moreover, while 78% of students thought that the application was easy to download and install, almost a fifth of students had repeated issues registering the application on their smartphones. From the results we can see that using the application significantly improved

students' awareness of their attendance and the majority of students were positive about using the application in future classes to help track their attendance. A larger study would be required to see whether the application would improve students' actual attendance over the one or more semesters.

Discussion

How does TKS compare to other attendance management options?

This research project revealed that using the TKS application had a positive impact on students' awareness of their attendance. For the classes surveyed, the application was successful in raising students' awareness of their attendance. Other more traditional attendance methods tend to be too teacher centered; they can be effective for helping the teacher keep track of attendance, but they fail to help students be more aware and hence vital opportunities to intervene are lost. TKS is a more student-centered form of attendance keeping. The students can check their attendance any time using the application. Students can also use the application to see daily class feedback regarding their behavior or to check their grades (if teachers choose to use the application for more than just attendance keeping). Involving students more in their learning and in their progress is one way to promote greater autonomy and more intrinsic motivation (Ryan & Deci, 2000; Ryan & Deci, 2017). As such, the application is a visually appealing and easy way of keeping students up to date with their progress. Attendance, like learning, should be easy. It should be student centered, easy to use and understand, and it should assist rather than hinder learning and development. Other forms of keeping attendance were explored in previous courses but these proved to be ineffective in increasing retention rates or enhancing students' awareness. For example, the LMS application Schoology has a way for teachers to record student attendance but taking attendance can be time consuming, especially when using a smartphone or tablet. Schoology is not mobile-friendly and usually works best on a big screen (laptop or desktop), which can hamper its convenience. Not being able to use the application in class means transferring attendance records into Schoology afterwards and technology should be about making teaching and learning easier rather than adding more steps. Using the attendance feature in Schoology resembled using an electronic spreadsheet rather than a convenient and easy to use application. Other LMS systems like Blackboard or Moodle also require too many steps for students to see their attendance. Clicking through options to find their attendance will reduce the chances of students actually doing so. As with Schoology, some features of these popular

LMS systems are also easier to use and navigate on larger screens. In defense of the LMS systems, TKS is only an attendance and grading application and so it lacks many of the other features LMS are capable of.

Other attendance applications are also available (MyClass Attendance Manager, Chalk Attendance) but they only let the teacher see the attendance, not the students. In other words, the students have to be notified of what their attendance is. Again, this may make attendance keeping easier for the teacher but it does address students' needs. TKS is useful in this respect because the student version of the application helps students keep track of their attendance and any updates made by the teacher to their attendance, grades, or behavior is available for the students to see as well, whenever they want. The most popular attendance application, Gradebook Pro, is a "powerful and easy-to-use grade- and attendance-management app designed for educators" but again, it is designed primarily for educators and not for students. One could argue that it is the teacher's responsibility to let students know when they have missed too many classes but as mentioned earlier, technology should be making teaching and administration easier instead of maintaining the status quo or even worse, distracting teachers from their classroom teaching time. In addition, Gradebook Pro costs over ¥2000 and so it is out of reach for some educators and schools around the world. A transformative application would need to be free if it is to truly change education for everyone.

According to the data, TKS also improved students' awareness of how often they had been late. Before the introduction of the application, almost 50% of students did not know how many lessons they had missed. While being late is a less serious issue than being absent, repeated tardiness can affect students' grades, as well as interrupting learning for other students (Race, 2007; Nilson, 2010). Therefore, it is useful that TKS helps students to be more aware of how many times they have missed class. However, there is one major issue uncovered by the research project which potentially nullifies all of the benefits mentioned above, and that is the technical issues that students encountered when installing the application. 20% of students felt the application was not easy to install and the process required repeated interventions by the teacher to resolve the problem. Students were unable to register for the application because it refused to recognize their email addresses, whether university or private email address. This proved to be very frustrating and time consuming for both the students and the teachers. In some cases, the application would say 'this email address has not been verified' and the student would have to wait several days before they were given access to their account. In essence, the process of downloading and installing was

messy and haphazard. This is exactly what teachers should be avoiding at the start of their new courses every semester. Although all of the students could eventually register on the application, it took too much time and effort to do so. In addition, while there is sufficient information on the website explaining the TK application, there is virtually no useful information explaining TKS. There are no detailed step by step explanations and Youtube videos are too short and lack detail. From an educators perspective they feel like prelaunch introductory videos rather than useful educational videos. Given the issues encountered and the almost complete lack of support, introducing TKS to university classrooms on a large scale would not be advisable at the moment. It seems that all of the focus for the team at TK went into designing the application and no one thought about what happens afterwards in the classroom. This is highly disappointing because the student-centered nature of the application makes it a very appealing attendance tool for use in schools or in universities.

Despite the issue mentioned above, TKS improved students' awareness of their attendance record and most students recommend that their teachers introduce the application in their other classes or in their future classes. The frequent inquiries about attendance or rates of absences shows that students lacked awareness of their circumstances, but were eager to know their standing. It would be easier if students could use their smartphones to quickly and easily check how often they had missed class or been late. TKS succeeded in meeting this need. Another good reason for using the application is to help students become aware of any attendance issues from the very start and to prevent attendance from declining or developing into a bigger issue further on. According to Kassarnig et al. (2017), early and consistent class attendance strongly correlates with academic performance. Addressing the issue early may help students to stay focused and to succeed in their classes. As evidenced in school situations where attendance is compulsory, early intervention is one of the best ways to prevent absenteeism from negatively affecting students' learning and grades (Hancock, Shepherd, Lawrence, & Zubrick, 2013). TKS could potentially be a useful tool to promote early intervention and hence later student success.

Conclusion

It is important for all teachers to communicate the importance of attendance to students (Muir, 2009). Like my colleagues, I regularly try to explain the importance of attendance for students' learning and for their grades. Despite my efforts, there are some students who realize too late the importance of their attendance. As educators, we have to

find ways to help our students become aware of their attendance and consequently take more control and action over their learning and their academic decisions.

The TKS application was successful in improving students' awareness of their attendance and punctuality. It is a useful tool that helps teachers manage attendance and grades in class while also helping students to be more aware of their attendance and to keep track of how their attendance is affecting their grade and their learning. However, the problems present when registering for the application are a major cause for concern and the lack of technical support does little to promote feelings of trust and confidence in the application. It may be ready for wider ranging use in the future, but at the moment, it is hampered by the technical issues aforementioned. That being said, the design of the application offers other software developers a worthy example of a more student-centered approach to attendance keeping in the classroom. In 2019, it is remarkable that TKS is the only application currently offering this feature in an easy to use interface. Other software developers should be taking note and incorporating this approach in their attendance applications. The application developers should also be aware of where TKS failed and do more to make the process of student registration easier. A student-centered attendance application becomes useless if it fails to register everyone. Likewise, this application is not a panacea for truancy or absenteeism. Installing the application on students' phones will not mean that students will never miss class or be late again. There are other important ways to improve student attendance, such as making classroom teaching more active and engaging; offering more online learning opportunities for students when they are forced to miss class for valid reasons; building better rapport between students and staff; and providing students with more student centered and engaging learning approaches (Muir, 2009; Kaassainig, 2017; Bijsmans & Schakel, 2018). TKS is just one extra tool to improve student's attendance and thus improve students learning and grades. By fixing the defects in the current version of the application, it has the potential to do this. Until then, I will continue to explore other student-centered methods of improving students' attendance in the hope that eventually I will find the right application for the duty.

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